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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/835,030	04/13/2001	Charles Reed JR.	SAR 14110	5109
28166	7590	01/12/2005	EXAMINER	
MOSER, PATTERSON & SHERIDAN, LLP /SARNOFF CORPORATION 595 SHREWSBURY AVENUE SUITE 100 SHREWSBURY, NJ 07702			ZHENG, EVA Y	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/835,030	REED, CHARLES	
	Examiner	Art Unit	
	Eva Yi Zheng	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 8 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 5-7 and 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. The objection to specification has been withdrawn because of the amendment.
2. Applicant's arguments filed on September 23, 2004 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meet the claimed limitation as rejected.
 - a) Applicant's argument – Regarding claims 1 and 4 as rejected under 35 U.S.C. 102(b) as being anticipated by Gutnik et al. (2002/0049936 A1), applicant argues that rejection based on provisional application is improper.

Examiner's response – First of all, examiner rejected claims 1 and 4 under 35 U.S.C 102 (e), not 102 (b). Applicant must look at examiner's office action carefully. Secondly, examiner believes that it is proper to use Gutnik as prior art under 35 U.S.C 102 (e). According to 35 U.S.C. 102 Conditions for patentability, novelty and loss of right to patent, a person shall be entitled to a patent unless — (e) the invention was described in — (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent. Please refer to MPEP chapter 2136 for additional information. In addition, please see attachment of a copy of the provisional application prepared by examiner for applicant's convenience.

- b) Applicant's argument – Regarding claim 8, rejection under 35 U.S.C 103(a), Dalmia failed to teach a plurality of phase detectors.

Examiner's response – Dalmia discloses a phase detector (102 in Fig. 4) and a frequency detector (104 in Fig. 4). It is well known that in a digital communication

system frequency and phase are directly related. The frequency detector (104) is inherent as a phase detector. Dalmia discloses a conventional signal recovery system, (in Fig. 1) comprising a phase detector (18) and a phase-frequency detector (20). It is well known that phase-frequency detector is commonly used in the commercial PLL industry. The phase-frequency detector provides a frequency-sensitive signal to aid acquisition when the loop is out of lock. The phase-frequency detector is able to adjust the gain of the phase detector to optimize the loop performance. Therefore, The frequency detector (104) is inherent as a phase detector and meet the claim limitation.

c) Applicant's argument – Regarding claim 8, rejection under 35 U.S.C 103(a), Dalmia failed to teach a sum at an output of a plurality of phase detectors.

Examiner's response – Dalmia discloses a data and clock recovery circuitry comprising a logic gate 106, which receive the outputs from phase and frequency detector (Fig. 4). Dalmia specifically stated that gate 106 may be implement as any logic gate to meet the design criteria (Col 3, L31-34). To implement gate 106 as an AND gate will add the outputs from the phase and frequency detector and produce a sum at the output of logic gate 106. Therefore, Dalmia meet the claim limitation of sum at output of a plurality of phase detectors.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by

Gutnik et al. (US 2002/0049936 A1).

a) Regarding claim 1, Gutnik et al. disclose a method for performing timing recovery comprising:

producing phase signals (16 a-d in Fig. 2) by comparing a signal received at each of a plurality of inputs (clock signal 1-4 in Fig.2) to a timing signal produced by a numerically controlled oscillator (NCO) (clock signal 0 in Fig. 2; oscillator 24 inherent as NCO);

summing said phase signals to produce a sum (18 in Fig. 2);

adjusting said sum into an input range for the numerically controlled oscillator (NCO) (22 in Fig. 2; Col 2, L39-42); and

producing a timing signal within the NCO in response to the adjusted sum (24 in Fig. 2).

b) Regarding claim 4, Gutnik et al. disclose the method of claim 1 wherein said adjusting comprises:

determining whether each input is receivable (Fig. 3; Col 2, L60-63);

determining an offset using a number of receivable inputs (36 in Fig. 3); and

adjusting the sum using the offset (as shown in Fig. 2).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dalmia et al. (US 6,307,413 B1).

Regarding claim 8, Dalmia et al. disclose an apparatus for performing timing recovery of a signal, said apparatus comprising:

a plurality of phase detectors (102 and 104 in Fig. 4);

a summer (106 in Fig. 4; inherent as a summer according to Col 3, L32-34) for adding said detected phases to form a sum;

a level shifter (108 in Fig. 4) for adjusting the sum to within an input range of said NCO (inherent as VCO);

a loop filter for filtering the adjusted sum (108 in Fig. 4); and

the NCO (110 in Fig. 4) for generating a timing signal in response to the filtered sum.

Dalmia et al. disclose all of the subject matter as described above except for the specially teaching of plurality of inputs. Rather than detecting phase signals by comparing a signal received at each of a plurality of inputs to a timing signal produced by a NCO, Dalmia et al. disclose detecting phase signals by comparing a signal received at different data rate to a timing signal produced by a NCO (101 in Fig. 4).

However, it would be obvious to one of ordinary skill in the art at the time of invention to modify Dalmia et al.'s system to receive two different signal inputs instead of a single input with two different data rate. It would perform equally well with applicant's system.

Allowable Subject Matter

7. Claims 2, 3, 5-7, and 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is (571) 272-3049. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

January 3, 2005

Eva Yi Zheng
Examiner
Art Unit 2634



SHUWANG LIU
PRIMARY EXAMINER